

1 **WHAT IS CLAIMED IS:**

2 1. A low density iron based alloy for golf club head, the alloy consisting
3 of essentially by weight of 25 to 31 percent manganese, 5 to 7 percent chromium,
4 7 to 10 percent aluminum, 0.9 to 1.1 percent carbon, and the remaining weight of
5 the alloy being iron, where the density of the alloy is below 6.6 g/cm³.

6 2. The low density iron based alloy as claimed in claim 1, wherein the
7 alloy further contains 0.8 to 1.5 percent silicon.

8 3. The low density iron based alloy as claimed in claim 1, wherein the
9 alloy further contains 2 to 5 percent titanium.

10 4. The low density iron based alloy as claimed in claim 1, wherein the
11 alloy further contains 0.5 to 1 percent molybdenum.

12 5. The low density iron based alloy as claimed in claim 1, wherein the
13 alloy is hot forged at 800 degrees centigrade to 1050 degrees centigrade and has
14 a surface roughness of 2.4 to 3 μm .